

## ABSTRACT

Disclosed is a high efficiency hot air furnace including a heat exchanger assembly located in a heat exchange chamber through which comfort air is passed to be heated. The heat exchanger assembly includes a drum like combustion member located in the flow path of comfort air. A supplemental heat exchanger or condenser is disposed in the flow path of comfort air upstream from the combustion member. A transfer channel extends from one end of the combustion member and communicates combustion products to the condenser. The combustion member includes an insulating material on the inside portion of the cylindrical wall. A diffuser is located within the combustion member which prevents the burner flame from extending into the transfer channel. The burner includes a blower for urging combustion gases through the heat exchanging assembly. Intake air for the blower is provided by an air intake chamber.